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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/702,130	11/05/2003	Hiroshi Kurachi	791_230	6835
25191	7590	04/25/2007	EXAMINER	
BURR & BROWN			OLSEN, KAJ K	
PO BOX 7068				
SYRACUSE, NY 13261-7068			ART UNIT	PAPER NUMBER
			1753	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		04/25/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/702,130	KURACHI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Kaj K. Olsen	1753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### **Status**

- 1) Responsive to communication(s) filed on \_\_\_\_.
- 2a) This action is **FINAL**.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### **Disposition of Claims**

- 4) Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_ is/are allowed.
- 6) Claim(s) 1-20 is/are rejected.
- 7) Claim(s) \_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### **Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### **Priority under 35 U.S.C. § 119**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### **Attachment(s)**

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)  
 Paper No(s)/Mail Date \_\_\_\_.
- 4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date \_\_\_\_.
- 5) Notice of Informal Patent Application
- 6) Other: \_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

- 2.. Claims 1-8 and 13-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Müller et al (USP 4,282,080).

3. Müller discloses a gas sensor comprising a gas detecting section and a heater section secured to the gas sensor. Müller further discloses that the heater section including a heating element 52 and a support (any of 50, 53 or 43), which supports the heating element. See fig. 5 and col. 5, l. 41 through col. 6, l. 46. Müller further discloses a number of features that would read on the defined “opening section” of the claims. First, cover 50 leaves the heater leads (54, 54/1) exposed to the external environment at the rear edge of the sensor (see fig. 5) and this would read on the defined opening section. Second, the gas tight cover 50 contains free space 51 that may be left exposed to ambient air. See col. 6, ll. 39-46. This would also read on the defined opening section of the claims. Third, the heater is placed on a porous layer 53 and a porous layer would inherently possess pores that read on the defined opening section. Finally, the heater can also contain a gas pervious protective layer on the other side of the heater from the porous layer 53. Again, because a porous layer contains pores, it read on the defined opening

section. All these various opening sections would allow any pressure generated at the heating element to be reduced.

4. With respect to the structure of the detecting section, Müller discloses a solid electrolyte diaphragm 43 and at least a pair of electrodes (44, 46) disposed on each side of the diaphragm. See fig. 5 and col. 5, ll. 41-47.

5. With respect to an air inlet space, free space 51 would read on the defined air inlet space.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 9-12 rejected under 35 U.S.C. 103(a) as being unpatentable over Müller in view of Haecker et al (USP 4,283,441).

8. Müller set forth all the limitations of the claims and disclosed the use of zirconia (col. 4, ll. 12-21), but did not explicitly recite the use of stabilized zirconia. Haecker teaches that the stabilized form of zirconia has a number of advantages including lowered sintering activity, increased ion conductivity, and temperature change stability. See col. 2, l. 52 through col. 3, l. 18. It would have been obvious to one of ordinary skill in the art at the time the invention was being made to utilize stabilized zirconia as taught by Haecker for the sensor of Müller so as to benefit from the advantages highlighted above.

***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Scheer et al (USP 7,083,710) (see fig. 3), Tojo et al (USP 6,068,747) (see fig. 2), Schneider et al (USP 5,516,410) (see fig. 2-4), Sugiyama et al (USP 6,156,176) (see fig. 3, 6, 7), Saito et al (USP 4,908,119) (see fig. 1A, 7A), and Katsu et al (USP 5,238,551) (see fig. 2) all teach structure relevant to the defined opening section.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kaj Olsen whose telephone number is (571) 272-1344. The examiner can normally be reached on Monday through Friday from 8:00 A.M. to 4:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen, can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AU 1753  
April 18, 2007



KAJ K. OLSEN  
PRIMARY EXAMINER